MITSUBISHI BIPOLAR DIGITAL ICs

M54580P

7-UNIT 150mA SOURCE TYPE DARLINGTON TRANSISTOR ARRAY

6249826 MITSUBISHI ELEK (LINEAR) 80C 09319 D T-43-25

DESCRIPTION

The M54580P, 7-channel source driver, consists of 7 PNP and 7 NPN transistors connected to form high current gain driver with PNP action.

FEATURES

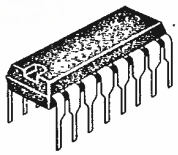
- High output sustaining voltage to 50V
- High output source current to 150mA
- Wide operating temperature range (T_a = −20~+75℃)

APPLICATION

Relay and printer driver, LED, incandescent or fluorescent display driver, Interfacing for standard MOS/BIPOLAR logics

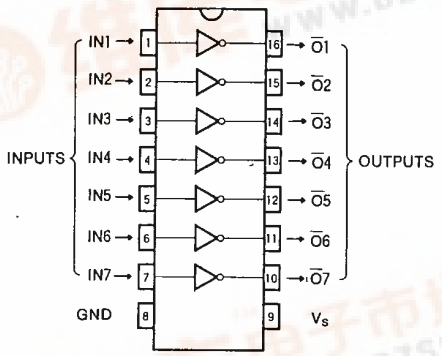
FUNCTION

The M54580P is comprised of seven PNP-NPN darlington source driver pairs with a diode and 7 kΩ resistor in series to the input. The output is turned ON by switching the input low. Each output has 50kΩ pull-down resistor suitable for driving fluorescent displays. The outputs are capable of driving 100mA and are rated for operation with output voltage up to 50V.



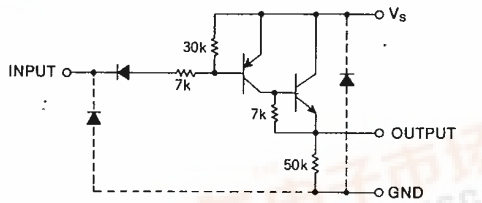
16-pin molded plastic DIP

PIN CONFIGURATION (TOP VIEW)



Outline 16P4

CIRCUIT SCHEMATIC



Unit : Ω

ABSOLUTE MAXIMUM RATINGS (T_a=−20~+75℃, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_S	Supply voltage		50	V
V_{CEO}	Output sustaining voltage	Transistor OFF	−0.5~+50	V
V_I	Input voltage		0~V_S	V
I_O	Output current	Transistor OFF	−150	mA
P_d	Power dissipation	T_a =25℃	1.47	W
T_{opr}	Operating ambient temperature range		−20~+75	℃
T_{stg}	Storage temperature range		−55~+125	℃

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RECOMMENDED OPERATIONAL CONDITIONS (T_a=−20~+75℃, unless otherwise noted)

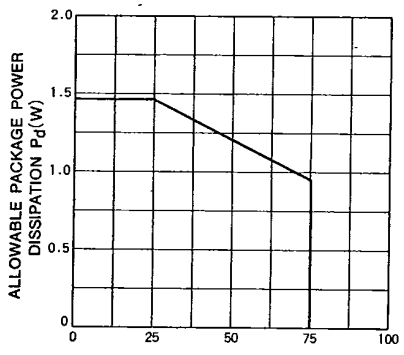
Symbol	Parameter		Limits			Unit
			Min	Typ	Max	
V_S	Supply voltage		4		50	V
I_O	Output current per channel	All outputs conducting simultaneously Percent duty cycle less than 85%	0		−100	mA
		All outputs conducting simultaneously Percent duty cycle less than 100%	0		−50	
V_{IH}	"H" Input voltage	$I_{O(leak)}$=50μA	V_S−0.4		V_S	V
V_{IL}	"L" Input voltage	I_O =−100mA	0		V_S−3.2	V

ELECTRICAL CHARACTERISTICS (T_a=−20~+75℃, unless otherwise noted)

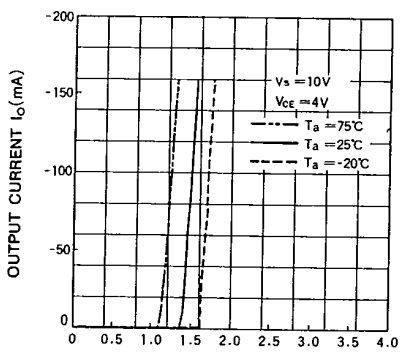
Symbol	Parameter	Test conditions		Limits			Unit
				Min	Typ	Max	
$V_{(BR)CEO}$	Output sustaining voltage	I_{CEO} = 100μA		50			V
$V_{CE(sat)}$	Output saturation voltage	V_I = V_S−3.2V	I_O =−100mA		0.9	1.5	V
			I_O =−50mA		0.8	1.2	
I_I	Input current	V_I = V_S−3.5V			−0.3	−0.6	mA
		V_I = V_S−6V			−0.65	−0.95	
I_R	Input leakage current	V_I =40V				100	μA
h_{FE}	DC forward current gain	V_{CE} =4V, V_S =10V, I_C =−100mA, T_a=25°C		800	3000		−

TYPICAL CHARACTERISTICS

ALLOWABLE AVERAGE POWER DISSIPATION



OUTPUT CURRENT CHARACTERISTICS



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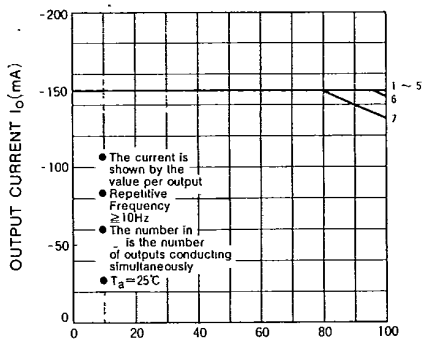
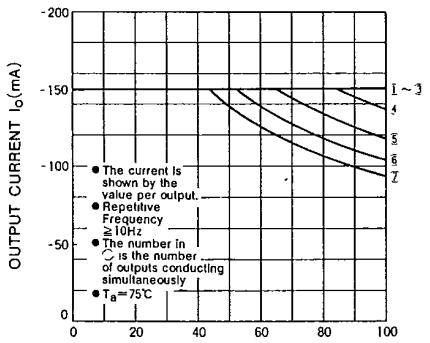
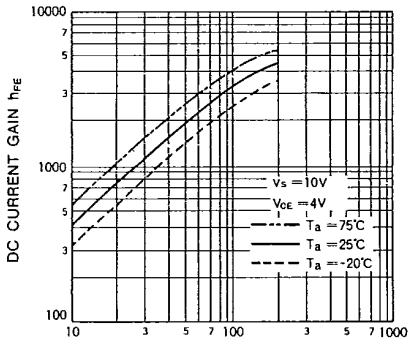
ALLOWABLE OUTPUT CURRENT AS A FUNCTION OF DUTY CYCLE



ALLOWABLE OUTPUT CURRENT AS A FUNCTION OF DUTY CYCLE



DC CURRENT GAIN CHARACTERISTICS



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